

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.-30. (Canceled)

31. (Currently Amended) A liquid crystal device comprising:

first and second substrates;

a liquid crystal layer comprising a ferroelectric liquid crystal provided between said first and second substrates;

a resin disposed between said first and second substrates;

a spacer disposed between said first and second substrates;

an electrode provided over at least one of said first and second substrates for applying an electric field to said ferroelectric liquid crystal;

an orientation film provided over said first substrate; and

a film provided over said second substrate,

wherein said resin covers said orientation film and at least a portion of said resin is contiguous to said orientation film and to said film provided over said second substrate,

wherein said resin is formed by disposing a mixture of the liquid crystal and a curable resin between said first and second substrates and curing said curable resin.

32. (Currently Amended) A liquid crystal device comprising:

first and second substrates;

a liquid crystal layer comprising a ferroelectric liquid crystal provided between said first and second substrates;

a resin disposed between said first and second substrates;

a spacer disposed between said first and second substrates;

an electrode provided over at least one of said first and second substrates for applying an electric field to said ferroelectric liquid crystal;

an orientation film provided over said first substrate; and

a film provided over said second substrate,

wherein said resin covers said orientation film and at least a portion of said resin is contiguous to said orientation film and to said film provided over said second substrate,

wherein said resin is formed by disposing a mixture of the liquid crystal and a curable resin between said first and second substrates and curing said curable resin and an intensity of light transmitted through the liquid crystal layer can be continuously changed in accordance with a strength of the electric field in an operation of the liquid crystal device.

33. (Previously Presented) A liquid crystal device comprising:

first and second substrates;

a liquid crystal layer comprising an antiferroelectric liquid crystal provided between said first and second substrates;

a resin disposed between said first and second substrates;

a spacer disposed between said first and second substrates;

an electrode provided over at least one of said first and second substrates for applying an electric field to said antiferroelectric liquid crystal;

an orientation film provided over said first substrate; and

a film provided over said second substrate,

wherein said resin covers said orientation film and at least a portion of said resin is contiguous to said orientation film and to said film provided over said second substrate,

wherein said resin is formed by disposing a mixture of the liquid crystal and a curable resin between said first and second substrates and curing said curable resin.

34.-37. (Canceled)

38. (Withdrawn) The device of claim 35 wherein said resin is provided on said orientation film.

39. (Withdrawn) The device of claim 36 wherein said resin is provided on said orientation film.

40.-45. (Canceled)

46. (Previously Presented) The device of claim 34 wherein said resin comprises an acrylic resin.

47. (Previously Presented) The device of claim 35 wherein said resin comprises an acrylic resin.

48. (Previously Presented) The device of claim 36 wherein said resin comprises an acrylic resin.

49. (Previously Presented) The device of claim 31 wherein said liquid crystal device is an active matrix type.

50. (Previously Presented) The device of claim 32 wherein said liquid crystal device is an active matrix type.

51. (Previously Presented) The device of claim 33 wherein said liquid crystal device is an active matrix type.

52.-54. (Canceled)

55. (Previously Presented) A liquid crystal device comprising:
a pair of substrates;
a liquid crystal layer comprising a ferroelectric liquid crystal provided between said substrates;
a column-shape resin disposed between the pair of substrates;
an electrode provided over at least one of said substrates for applying an electric field to said ferroelectric liquid crystal;
an orientation film provided over at least one of said substrates; and
a spacer provided between said substrates,
wherein said column-shape resin is formed by disposing a mixture of the liquid crystal and a curable resin between the pair of substrates and curing said curable resin.

56. (Previously Presented) A liquid crystal device comprising:
a pair of substrates;
a liquid crystal layer comprising an antiferroelectric liquid crystal provided between said substrates;
a column-shape resin disposed between the pair of substrates;
an electrode provided over at least one of said substrates for applying an electric field to said antiferroelectric liquid crystal;
an orientation film provided over at least one of said substrates;
a spacer provided between said substrates,
wherein said column-shape resin is formed by disposing a mixture of the liquid crystal and a curable resin between the pair of substrates and curing said curable resin.

57. (Previously Presented) The device of claim 55 wherein said resin comprises an acrylic resin.

58. (Previously Presented) The device of claim 56 wherein said resin comprises an acrylic resin.

59.-64. (Canceled)

65. (Previously Presented) The device of claim 55 wherein said resin is provided on said orientation film.

66. (Previously Presented) The device of claim 56 wherein said resin is provided on said orientation film.

67. (Currently Amended) A liquid crystal device comprising:
a pair of substrates;
a liquid crystal layer comprising a ferroelectric liquid crystal provided between said substrates; and
a resin disposed between the pair of substrates;
a spacer disposed between the pair of substrates;
a pixel comprising a transparent pixel electrode provided between said substrates,
wherein a transmitted light amount of said pixel takes a halftone without occurrence of a domain, and
wherein said resin is formed by disposing a mixture of the liquid crystal and a curable resin between the pair of substrates and curing said curable resin.

68. (Canceled)

69. (Currently Amended) A liquid crystal device comprising:
a pair of substrates;
a liquid crystal layer comprising an antiferroelectric liquid crystal provided between said substrates; and
a resin disposed between the substrates;
a spacer disposed between the substrates;

a plurality of pixels each comprising a transparent pixel electrode provided between said substrates,

wherein a transmitted light amount of each of said pixels takes a halftone without occurrence of a domain, and

wherein said resin is formed by disposing a mixture of the liquid crystal and a curable resin between the pair of substrates and curing said curable resin.

70.-82. (Canceled)

83. (Withdrawn) The device of claim 71 wherein said resin comprises an acrylic resin.

84. (Withdrawn) The device of claim 72 wherein said resin comprises an acrylic resin.

85. (Withdrawn) The device of claim 73 wherein said resin comprises an acrylic resin.

86. (Withdrawn) The device of claim 74 wherein said resin comprises an acrylic resin.

87. (Withdrawn) The device of claim 71 further comprising an orientation film as a uniaxial orientation means.

88. (Withdrawn) The device of claim 72 further comprising an orientation film as a uniaxial orientation means.

89. (Withdrawn) The device of claim 73 further comprising an orientation film as a uniaxial orientation means.

90. (Withdrawn) The device of claim 74 further comprising an orientation film as a uniaxial orientation means.

91. (Withdrawn) The device of claim 87 wherein said resin is provided on said orientation film.

92. (Withdrawn) The device of claim 88 wherein said resin is provided on said orientation film.

93. (Withdrawn) The device of claim 89 wherein said resin is provided on said orientation film.

94. (Withdrawn) The device of claim 90 wherein said resin is provided on said orientation film.

95.-98. (Canceled)

99. (Withdrawn) A method for forming a liquid crystal electro-optical device comprising:

injecting a mixture of liquid crystal material and an uncured polymeric resin containing a monomer at 60 weight % or more between a pair of substrates having an orientation film over one of said substrates; and

hardening said resin under a state where said liquid crystal material exhibits a smectic phase and is oriented in an orientation direction of said orientation film.

100.-105. (Canceled)

106. (Withdrawn) The method of claim 99 wherein said resin is hardened into a form of a plurality of protrusions on said orientation film.

107. (Withdrawn) The method of claim 99 wherein said liquid crystal material comprises a ferroelectric liquid crystal.

108. (Withdrawn) The method of claim 99 wherein said liquid crystal material comprises an antiferroelectric liquid crystal.

109. (Currently Amended) A liquid crystal device comprising:
first and second substrates;
a liquid crystal layer comprising a ferroelectric liquid crystal provided between said first and second substrates;
a resin disposed between said first and second substrate substrates;
a spacer disposed between said first and second substrates;
an electrode provided over at least one of said substrates for applying an electric field to said ferroelectric liquid crystal;
an orientation film provided over said first substrate; and
a film provided over said second substrate,
wherein said resin covers said orientation film and at least a portion of said resin is contiguous to said orientation film and to said film provided over said second substrate,
wherein said resin is formed by disposing a mixture of the liquid crystal and a curable resin between said first and second substrates and curing said curable resin, and
wherein a transmitted light amount of said liquid crystal layer continuously varies in response to voltage applied to said liquid crystal layer.

110. (Previously Presented) The device of claim 109 wherein said resin comprises an ultraviolet curable resin.

111.-114. (Canceled)

115. (Previously Presented) The device of claim 109 wherein said liquid crystal device is an active matrix type.

116. (Withdrawn) A method for forming a liquid crystal device comprising:
forming an orientation film over at least one of a pair of substrates;
disposing said substrates to oppose said substrates to each other;
injecting a mixture comprising a liquid crystal material and an uncured resin between the opposed substrates; and
curing said uncured resin after said injecting to provide a cured resin,
wherein said liquid crystal device comprises a pixel whose transmitted light amount takes a halftone.

117. (Withdrawn) A liquid crystal device comprising:
a pair of substrates;
a liquid crystal layer comprising a ferroelectric liquid crystal provided between said substrates,
an electrode provided over at least one of said substrates;
an orientation film provided over at least one of said substrates; and
a resin disposed between the pair of substrates,
wherein said ferroelectric liquid crystal does not have helical structure between said substrates,
wherein said ferroelectric liquid crystal does not produce domain, and
wherein a transmitted light amount of said liquid crystal layer continuously varies in response to voltage applied to said liquid crystal layer, and said resin is formed by

disposing a mixture of the liquid crystal and a curable resin between the pair of substrates and curing said curable resin.

118. (Withdrawn) The liquid crystal device according to claim 31 wherein said mixture is injected between the pair of substrates at a temperature at which the ferroelectric liquid crystal exhibits in an isotropic phase.

119. (Withdrawn) The liquid crystal device according to claim 31 wherein said mixture contains said curable resin at 20% or less.

120. (Previously Presented) The liquid crystal device according to claim 31 wherein at least a part of said resin is disposed between the liquid crystal layer and the orientation film.

121. (Previously Presented) The liquid crystal device according to claim 31 wherein said curable resin is a photocurable resin.

122. (Withdrawn) The liquid crystal device according to claim 32 wherein said mixture is injected between the pair of substrates at a temperature at which the ferroelectric liquid crystal exhibits in an isotropic phase.

123. (Withdrawn) The liquid crystal device according to claim 32 wherein said mixture contains said curable resin at 20% or less.

124. (Previously Presented) The liquid crystal device according to claim 32 wherein at least a part of said resin is disposed between the liquid crystal layer and the orientation film.

125. (Previously Presented) The liquid crystal device according to claim 32 wherein said curable resin is a photocurable resin.

126. (Currently Amended) The liquid crystal device according to claim 33 wherein an intensity of light transmitted through the liquid crystal layer can be continuously changed in accordance with a strength of the electric field in an operation of the liquid crystal device.

127. (Previously Presented) The liquid crystal device according to claim 33 wherein said curable resin is a photocurable resin.

128. (Withdrawn) A method for forming a liquid crystal device comprising:
forming an orientation film over at least one of a pair of substrates;
oppose said substrates to each other;
injecting a mixture comprising a liquid crystal material and a curable resin between the opposed substrates; and
curing said curable resin after said injecting to provide a cured resin,
wherein an intensity of light transmitted through the liquid crystal device can be continuously changed in accordance with a strength of an electric field applied to the liquid crystal material in an operation of the liquid crystal device.

129. (Withdrawn) The method according to claim 128 wherein said liquid crystal material comprises a ferroelectric liquid crystal.

130. (Withdrawn) The method according to claim 128 wherein said liquid crystal material comprises an antiferroelectric liquid crystal.

131. (Withdrawn) The method according to claim 128 wherein said curable resin is a photocurable resin.

132. (Withdrawn) The method according to claim 128 wherein said mixture contains the curable resin at 20% or less.

133. (Currently Amended) The liquid crystal device according to claim 31 wherein said liquid crystal layer does not have [[a]] memory characteristics.

134. (Currently Amended) The liquid crystal device according to claim 32 wherein said liquid crystal layer does not have [[a]] memory characteristics.

135. (Currently Amended) The liquid crystal device according to claim 33 wherein said liquid crystal layer does not have [[a]] memory characteristics.